



CENTER FOR COASTAL STUDIES, 0209
SCRIPPS INSTITUTION OF OCEANOGRAPHY

9500 GILMAN DRIVE
LA JOLLA, CALIFORNIA 92093-0218
PHONE: (619) 534-4333
FAX: (619) 534-0300

December 18, 1996

Scientific Officer Code: Code 321CD (3)
Dr. Thomas Kinder
Office of Naval Research
800 North Quincy Street
Arlington, VA 22217-5000

Administrative Contracting Officer (1)
Office of Naval Research
San Diego Regional Office
4520 Executive Drive, Suite 300
San Diego, CA 92121-3019

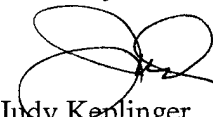
Director, Naval Research Laboratory (1)
Attn: Code 2627
Washington, DC 20375

Defense Technical Information Center (2)
Building 5, Cameron Station
Alexandria, VA 22304-6145

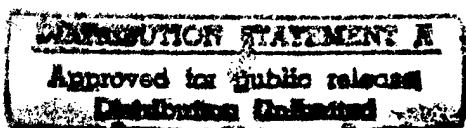
Subject: Final Technical Report
ONR Grant No. N00014-93-1-0007

Enclosed is the final technical report with the required number of copies as outlined in the original award documents for the referenced grant.

Sincerely,


Judy Keplinger
Contract & Grant Assistant
Center for Coastal Studies

cc: Nancy Wilson
SIO Contract & Grant Administration



19961223 097

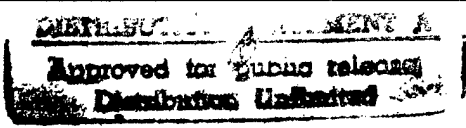
DTIC QUALITY INSPECTED 4

REPORT DOCUMENTATION PAGE

Form Approved

OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average one hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.

1. AGENCY USE ONLY (Leave blank)		2. REPORT DATE 9/30/96		3. REPORT TYPE AND DATES COVERED Final Technical Report 10/01/92 - 09/30/96	
4. TITLE AND SUBTITLE Bottom Pressure Fluctuations on the Shelf Induced by Surface Waves				5. FUNDING NUMBERS ONR Grant N00014-93-1-0007	
6. AUTHOR(S) Robert T. Guza Thomas H. C. Herbers					
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Scripps Institution of Oceanography, Center for Coastal Studies 9500 Gilman Drive La Jolla, CA 92093-0209				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) Office of Naval Research Thomas Kinder, ONR: 321CD 800 North Quincy Street Arlington, VA 22217-5500				10. SPONSORING/MONITORING AGENCY REPORT NUMBER	
11. SUPPLEMENTARY NOTES					
12a. DISTRIBUTION/AVAILABILITY STATEMENT UNRESTRICTED				12b. DISTRIBUTION CODE	
					
13. ABSTRACT (Maximum 200 words) SEE ATTACHED					
14. SUBJECT TERMS SURFACE GRAVITY WAVES, CONTINENTAL SHELF, HURRICANE GORDON				15. NUMBER OF PAGES 1	
				16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT Unrestricted	18. SECURITY CLASSIFICATION OF THIS PAGE Unrestricted	19. SECURITY CLASSIFICATION OF ABSTRACT Unrestricted	20. LIMITATION OF ABSTRACT None		

Final technical report for agreement number N00014-93-1-0007

This ONR grant, entitled "Bottom Pressure Fluctuations on the Shelf Induced by Surface Waves", resulted in successful research concerning the dynamics of surface gravity waves on the broad continental shelf offshore of North Carolina. A transect of pressure sensors were deployed on the sea floor from the shoreline to the shelf break and data was acquired nearly continuously for 4 months during Fall 1994. The data includes energetic waves generated by Hurricane Gordon. These and previously acquired observations have been used to study nonlinearly forced waves at both double-wind wave frequencies and at low infragravity frequencies. The energy levels and wavenumbers of motions in both frequency bands are accurately predicted by weakly nonlinear theory. While the double-frequency pressure field is shown to be consistently dominated by forced wave motions, the observed infragravity waves are a mixture of locally excited forced waves and usually more energetic free waves. Ongoing research concerns the evolution of sea and swell propagating across the shelf.

Publications acknowledging ONR support include

Herbers, T. H. C., S. Elgar, and R. T. Guza. Infragravity-frequency (0.005-0.05 Hz) motions on the shelf, Part I: Forced waves, *J. Phys. Oceanogr.*, 24, 917-927, 1994.

Elgar, S., T. H. C. Herbers, and R. T. Guza. Reflection of ocean surface gravity waves from a natural beach, *J. Phys. Oceanogr.*, 24(7), 1503-1511, 1994.

Herbers, T. H. C., and R. T. Guza. Nonlinear wave interactions and high-frequency sea floor pressure, *J. Geophys. Res.*, 99(C5), 10035-10048, 1994.

Herbers, T. H. C., S. Elgar, R. T. Guza, and W. C. O'Reilly, Infragravity-frequency (0.005-0.05 Hz) motions on the shelf, Part II: Free waves, *J. Phys. Oceanogr.*, 25(6), Part 1, 1063-1079, 1995.